[TFR 316-1]

MATERIALS

FOR THE SESSION

Of the Russian Federation Presidential Commission for POW/MIA affairs for both foreign citizens and Russians who became missing for unknown reasons outside the borders of the former Soviet Union

[TFR 316-2]

[Document is half Russian/half English]

CENTRAL FORENSICS LABORATORY MO USSR

Criminalistic/forensic department

105229 Moscow, E-229, Hospital Sq. 3. Tel. 293-48-95

ACT

September 8, 1994 Moscow

Today, the 8th of September, 1994, on the basis of a written request of the Chairman of the Russian Side of the Joint US-Russian Commission on Prisoners of War/Missing in Action D.A. Volkogonov, representative of the American Side of the Commission Anthropologist Bruce Anderson of the US Army Central Identification Laboratory in Hawaii transferred, and Deputy Director of the Central Forensic Laboratory of the Russian Federation Ministry of Defense V.M. Gribov received for forensic investigation two plastic containers with human remains, soil samples, and fragments of clothing from the burial site on Yuri Island.

B. Anderson V.M. Gribov

[Signature] [Signature]

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[Document is half Russian/half English]

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After completion of the investigation, in the presence of the administrative director of the Presidential Commission Major General A.A. Volkov, on the 13th of September, 1994, the items listed above were transferred back to the representative of the American Side of the Commission, Bruce Anderson.

Deputy Director of the Central Forensic Laboratory of the Russian Federation Ministry of Defense.

[Signature] V.M. Gribov

Received

[Signature] B. Anderson

Major General [Signature] A.A. Volkov

[TFR 316-4]

CENTRAL FORENSICS LABORATORY OF THE RUSSIAN FEDERATION (RF) MINISTRY OF DEFENSE (MOD)

Criminalistic/forensic department

105229 Moscow, E-229, Hospital Sq. 3. Tel. 293-48-95

Document No. 83/94

MEDICAL-FORENSIC EXAMINATION OF SKELETAL REMAINS

September 13, 1994 Moscow

Today, the 8th of September, 1994, on the basis of a written request dated 7 September, 1994, from the Chairman of the Russian Federation Presidential Commission for POW/MIA affairs for both foreign citizens and Russians who became missing for unknown reasons outside the borders of the former Soviet Union, D.A. Volkogonov, human skeletal remains have been delivered by members of the joint US-Russian expedition from Yuri Island for a forensics examination.

CIRCUMSTANCES

It is known from the Chairman's written request that the body of a male was found in the ocean on 7 October 1952. The facial portion of the head was shattered. The individual was buried on 8 October 1952 (sic) on Yuri Island. (Translator note: The body was actually buried on 10 October at 8:00 am).

There is little probability that there are any other individuals of European ancestry buried at the location indicated.

The purpose of the examination is to determine the probability of whether or not these skeletal remains belong to a male Caucasian, approximately 25 years old and 182 cm tall.

The following individuals were charged with conducting the examination:

- Deputy Director of the Central Forensics Laboratory (TSSML) RF MOD, Colonel Valery Mikhajlovich Gribov, Medical Services. He has advanced medical education, specializing in forensic medicine and criminal investigation/forensic methods, is highly qualified and has 27 years experience in his specialty;

- Chief of the Criminalistic Department for the Central Forensics Laboratory RF MOD, Lieutenant Colonel

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Sergej Anatol'evich Aksenov. Medical Services. He has advanced medical education, specializing in forensic medicine and criminal investigation/forensic methods, is highly qualified and has 14 years experience in his specialty;

- Senior forensics expert of the Criminalistic Department of the TSSML, medical sciences PhD candidate, Colonel Sergej Mikhajlovich Zosimov, Medical Services. He has advanced medical education, specializing in forensic medicine and criminal investigation/forensic methods, is highly qualified and has 29 years experience in his specialty;

- Forensic expert for the TSSML Criminalistic Department, Honored Doctor of the RF, RF MOD employee Viktor Aleksandrovich Katonin. He has advanced medical education, specializing in forensic medicine and criminal investigation/forensic methods, is highly qualified and has 25 years experience in his specialty.

EXAMINATION

Bruce Anderson, an Anthropologist from the U.S. Army Central Identification Laboratory-Hawaii and a member of the joint US-Russian expedition, delivered the material evidence for the examination. The items for the examination were packaged and labeled and transferred over by the American side as per the document.

Human skeletal remains and a small piece of cloth were bound in the labeled packets.

1. Examination of the skeletal remains.

1.1. General characteristics of the items to be examined.

The following items were presented for examination:

- 7 bone fragments of the base of the skull, 3 of which form a part of the base of the skull with a large opening toward the back;

- 7 cervical vertebrae;

- 11 thoracic vertebrae;

- 5 lumbar vertebrae;

- 6 sacral bone fragments;

- 5 pelvic bone fragments;

- 2 bone fragments of the right femur;

- 9 bone fragments of the left femur;

- 2 patellae;

- fragment of the right tibia;

- left tibia in the form of a large fragment and a conglomerate of smaller fragments, held together by vegetation roots;

- 2 fragments of the left fibula;

- 16 partially fragmented foot bones;

- 2 collar-bones/clavicle;

- 7 fragments of the left shoulder-blade and 5 fragments of the right shoulder-blade;

- 6 fragments of the sternum;

- 45 right rib fragments and 38 left rib fragments;

- 5 fragments of the right humerus and 9 fragments of the left humerus;

- 2 fragments of the right radius and 2 fragments of the left radius;

- 8 fragments of the right ulna and 13 fragments of the left ulna;

- 27 partially fragmented banes of the right hand and 30 of the left hand;

- fragment (body) of the sublingual bone.

The bones are dry and completely devoid of any soft tissue. The surfaces are partially covered with a significant amount of plant fibers with dirt attached to them. The bones have a brown tint with areas of dirty-pink color. The bones are light. They are crumbled with defects of a different form of dense material. The number of bones (to include pairs of bones), correlation of their size and the congruency of the articulated surfaces provide the basis for a categorical conclusion that all of the bones provided for the examination belong to one skeleton. The lack of any facial bones or teeth in skeletal remains that have been provided for examination exclude the possibility of establishing the race of the subject.

1.2. Determination of sex.

The bones of the torso and upper and lower extremities are properly developed; the are relatively large. The unevenness and roughness in the areas where the muscles attached are well developed. The wings of the ilia are weakly extended. The vertical diameter of the top of the left humerus is 48 mm, the horizontal diameter is 47 mm; the vertical diameter of the right humerus is 47 mm, the horizontal diameter is 48 mm. The vertical diameter of the top of the right femur is 45 mm, the horizontal diameter is 45 mm. The vertical diameter of the shaft of the left femur is 35 mm, the right femur is 33 mm. The width

of the condyle of the right femur is 80 mm. The length of the left clavicle is 156 mm, the right is 158 mm.

The anatomical peculiarities of the structure of the pelvic bones and the anthropometric parameters in comparison with the data of Dwight, Pearson, Bell, Dzhigor, Prokor and Vamosha [(b)(3)] provide the basis for the conclusion that the skeletal remains of the subject are those of a male.

1.3. Determination of age.

The age of the individual whose skeletal remains are being examined can be determined by an anatomic-morphology method of examination. The following has been established: The bones are completely formed and are relatively large. The (probable ossification) process of the bones of the pelvis, the upper and lower extremities has been competed. The dense layer of bone of the long tubular bones is full and strong at the fractures. The spongy material of the epiphysises has a radial structure and is finely porous. The remoteness of the bone-marrow cavity from the upper point of the epiphysis is 60 mm on the cross-section of the proximal epiphysis of the left humerus. The spongy material of the epiphysis is finely porous and has a radial structure. The epiphysial slit was maintained only near the lower edge of the upper section. These data can be used to calculate that this individual was between the ages of 23-29 at the time of death.

1.4. Determination of height.

In order to be able to determine the height of the individual whose skeletal remains are being examined, the length of the right humerus will be used since it is the only bone that could be totally reconstructed from the fragments provided. The length of the right humerus is 348 mm. The height, calculated according to Rolle data is 179 cm, according to data from Trotter and Glejzer as well as according to data from Dyupertyui and Hedden - 178 cm. In association with the fact that in order to establish a more exact height, measurements of several of the long bones must be made, the data provided from the calculation of the long bone (right humerus) have relative values and may differ from the actual values by plus or minus several centimeters.

Thus, the results of the examination have established that the skeletal remains that were exhumed from Yuri Island belong to a male who is approximately 23-29 years old and is about 178-179 centimeters tall. It is not possible to determine the race of the subject whose skeletal remains were provided for examination because of the absence of facial bones and teeth.

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The results of the examination do not preclude the possibility that the skeletal remains could be those of an individual who was 182 cm tall and was 25 years old at the time of death.

2. Establishing the cause of trauma.

There was a great amount of damage detected on the skeletal remains that were provided for the examination.

According to the report made by Anthropologist Bruce Anderson, a participant in the joint US-Russian expedition, the remains were buried approximately one meter into the clay-soil in an almost impenetrable coffin. This excludes the possibility that there may have been some secondary damage to the skeletal remains while they were in the ground over that extended period of time.

The radial fracture lines on the base of the skull, the transverse fractures of the appendices of the cervical vertebrae, the multitude of compressed wedge-shaped fractures of the thoracic and lumbar vertebrae, the shattering of the sacrum, lappet and sciatic bones and the impacted fracture of the cotyloid cavity is evidence of the massive trauma the victim suffered. Vertical forces caused the trauma on the torso and the foal point of the force was in the pelvic area with the victim most probably in a sitting position.

The impacted fractures of the epiphysises of both femurs, the damage to the bones that form the ankle and the bones of both feet are evidence of the massive strike and speed of the force applied in the direct of the longitudinal axes of the bones of both ankles. The foot and ankle areas appear to be where the force was applied.

The multiple fractures of the sternum, the transverse and spiral fragmentary fractures of the clavicles, the straight and jagged fractures of the ribs along various anatomical lines left and right and the fractures of the bones of the upper extremities were caused by a significant force striking the victim in a front to rear direction. For example, the type of force encountered when the torso and upper extremities are slammed into solid objects.

Thus, the multitude of fractures and the massive damage suffered by the skeleton, in combination with the mechanisms/forces mentioned above in the separate groupings is indicative of the result of an air accident.

A supposition can be made that at the moment of the disaster, the victim was in a sitting position. The legs were strapped in while the torso and the head were not. This allowed the head and torso area to move forward in a violent motion, striking solid objects located inside the aircraft.

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3. Examination of the scrap of cloth.

A scrap of synthetic cloth that is dark purple-violet in color, sewn in the form of a truncated cone from two longitudinal pieces of cloth with white stitches, was provided for examination. The cloth is moist. The is moist dirt packed into the cloth's creases and there are a multitude of roots from vegetation on the cloth's surface. There are areas where the roots have interwoven themselves into cloth. One end of the cloth scrap is even, straight and has a cuff that is 20 mm wide and stitched twice around it's circumference by a sewing machine. The other end of the cloth scrap is wavy with fiber edges. Round openings in the cloth are located 10 mm from these edges. The holes are equidistant from each other. There are threads in several of the openings (signs of sewing machine strokes). The edge of the cloth scrap with the cuff contains 3 metal "buttons" (snaps) that are located on two parallel seams and 50 mm from the sewn edge.

The general form, the form of the ends of the cloth scrap, the peculiarities of the joining of the pieces and the presence of creases and buttons are evidence that this piece of cloth is a left sleeve of an article of clothing. The length of the sleeve from the top to the lower edge is 645 mm. The diameter of the cuff is 330 mm. There are small tears in the sleeve that are 30 to 100 mm is length. The discrepancy of the seam from the top stretches is 220 mm and a wide improper oval form is an imperfection in the cloth. The imperfection has a maximum length of 240 mm and a width (diameter) of 140 mm. The edge of the defect os zigzag shaped. The ends of the threads are cut off evenly. Triangle shaped pocket covers have been sewn, by sewing machine, to the upper backside and lower backside of the ends of the imperfection. A section of the sides of these pocket covers form a straight line and are cut evenly with the end of the peculiarities of the ends of the threads are evidence to the fact that the imperfection in the cloth was

formed when it was cut during manufacture by a tool (tools) that has a sharp cutting edge. Such tools could be, for example, scissors, knife blades etc. The presence of sewn-on scraps of cloth on the edges of the imperfection allows one to believe that this cloth may have had a pocket on it. 30 mm below the upper edge of the sleeve on the external surface (5 mm below the traces of stitching), there is a barely discernable pattern in the form of a dark circle that is 60 mm in diameter. On the background, in the upper part of the circle, an image in the shape of two light colored wings is discernable.

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The lower sections of the wings enclose the upper part of a five-pointed star. The star has a light colored circle in the center. The diameter of the circle is 11 mm. There is a line of text, written is latin letters, below the pattern: "U.S. AIR FORCE".

An electro-optical converter "Rel'ef-4" was used during the examination of the pattern. The pattern was subjected to reflected infra-red light that had a wave length of 880-1100 nm. Sections where infra-red light was absorbed were detected in the area which corresponded to the dark circle (to a greater degree) and the area which corresponded to the star (to a lesser degree).

Sectors where infra-red light was partially absorbed were detected in areas that corresponded to the wings and the central circle in the star. The inscription "U.S. AIR FORCE" was not seen under infra-red light due to the lack of difference between the reflection of infra-red light beams off the background of the cloth and reflection of the lettering dye.

Thus, the results of the examination have established that the scrap of cloth is a left sleeve of an article of clothing. The sleeve was separated from the remaining clothing by means of ripping the stitching along the seam. There are snaps on the cuff of the sleeve that are in the form of metal buttons. The upper section has a pattern on it and under the pattern are located the words "U.S. AIR FORCE". The pocket cover is located under the pattern and was removed by a tool that had a sharp edge. The fact that root structures of vegetation were interwoven in the cloth is evidence that the fabric had been in the soil for an extended period of time.

Conclusion

On the basis of the examination of skeletal remains and clothing scrap, in accordance with the questions provided, the commission of experts has come to the following conclusion:

1. The skeletal remains that were exhumed from Yuri Island belong to a male who was 23-29 years of age and was approximately 178-179 centimeters tall at the time of death. Due to the absence of any facial bones or teeth, it is impossible to discern his race.

The results of the examination do not contradict the possibility that the skeletal remains of the subject could belong to an individual who was 25 years old and 182 cm tall at the time of death.

2. The multitude and magnitude of damage to the skeletal remains, when calculating the forces endured by the separate groups as mentioned earlier in the document, is consistent with the trauma victims suffer when involved in air crashes, either on land or at sea.

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The supposition can be made that at the moment of the catastrophe, the victim was in a sitting position. His legs were fastened down. The torso and head were not fastened down and they were slammed forward, striking the solid objects located inside the aircraft.

3. The scrap of cloth presented for examination is a left sleeve of a uniform worn by personnel serving in the U.S. Air Force and had been in the ground for an extended period of time.

Experts:

Colonel, Medical Services [Signature] V. Gribov

Lt. Colonel, Medical Services [Signature] S. Aksenov

Medical science PhD candidate

Colonel, Medical Services [Signature] S. Zosimov

Honored Doctor of the RF

Employee of the RF MOD [Signature] V. Katonin

[seal "Central Forensics Laboratory

USSR Ministry of Defense"]

[TFR 316-12]

CENTRAL FORENSICS LABORATORY

UNDER THE AUSPICES OF THE TSVMU MOD USSR

TABLE NO. 1 TO CONCLUSION NO. 83/94

[Photo of humerus]

Photo 1. Longitudinal cross-section of the epiphysis of the humerus. The radial structure of the spongy material and the extent of the bone marrow channel are shown.

[Photo of piece of cloth]

Photo 2. Graphics and letters on the left sleeve of the clothing.

Experts: [Signature] V.M Gribov

[Signature] S.A. Aksenov

[Signature] S.M. Zosimov

[Signature] V.A. Katonin

[Letterhead "Russian Federation Presidential Commission for POW/MIA affairs for both foreign citizens and Russian who became missing for unknown reasons outside the borders of the former Soviet Union

103132 Moscow, Staraya Sq. 4, Entrance 1

Tel. 206-35-73, Fax 206-35-79"]

"13" September 1994

No. A34-4/12

Co-Chairman

of the Russian-American Commission,

Ambassador

MALCOLM TOON

Esteemed Ambassador

I am informing you that, after prolonged exhaustive work, the Russian-American expedition to Yuri Island has achieved its purpose; remains were found for the American pilot, Captain Dunham, shot down in the area by Soviet fighters 7 October 1952.

In turning over the remains of Captain Dunham to our American colleagues for burial by relatives, I express the hope that the time for "Cold", and especially "Hot", wars has passed on into oblivion, never to return. With this joint search for the sorrowful grave of the American pilot, our Commission not only continued the humanitarian mission, but also made a contribution to the matter of strengthening trust between our great peoples.

Together with the relatives of Captain Dunham, I bow my head over his grave.

Sincerely, Co-Chairman for the Commission

Dmitrij Volkogonov,

Lt. General, Delegate of the

Russian Parliament

[Signature]